

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A liquid crystal display device, comprising:
 - a liquid crystal display (LCD) panel, the LCD panel including a plurality of gate lines and a plurality of data lines crossing the plurality of gate lines, and a plurality of red (R), green (G), and blue (B) pixels arranged in a matrix pattern;
 - a gate driving unit to apply scan signals to the plurality of gate lines;
 - a lookup table to store a gray scale value corresponding to a predetermined gray scale level of a [[first]] displayable color;
 - ~~a data processing unit that retrieves a gray scale value from the lookup table using input data for the first displayable color, that determines from the retrieved gray scale value whether color reproducibility for the first displayable color is reduced, and that based on the determination compensates the input data for the first displayable color and supplies gray scale data for a second displayable color to produce compensated image information, wherein the gray scale data for the second display color is retrieved from the lookup table using the input data for the first displayable color;~~
 - a data processing unit that analyzes the displayable color in received image information, replaces the B color value in the received image information with a B color value at gray scale immediately prior to the level to begin reducing a color reproducibility retrieved from the lookup table in response to a determination that the B color value in the received image information is greater than a reference gray scale level to begin reducing the color reproducibility, and that outputs a compensated displayable color,
 - wherein in response to the determination that the B color value of the displayable color is greater than the reference gray scale level to begin reducing a color reproducibility, the data processing unit retrieves at least one of an R color value and a G color value from the lookup table to be mixed with the received image information to compensate the displayable color; and
 - a data driving unit to receive the ~~compensated~~ image information including the compensated displayable color and to apply the compensated image information to the data lines.

2. (Currently Amended) The device of claim 1, wherein the predetermined gray scale level corresponds to a gray scale level of the ~~first~~ displayable color prior to a reduction in a reproducibility of the ~~first~~ displayable color.

3. (Currently Amended) The device of claim 1, wherein the stored gray scale value is a maximum gray scale value,

wherein the maximum gray scale value is the gray scale value corresponding to the maximum gray scale level displayable by the LCD panel for which the color reproducibility of the ~~first~~ displayable color is not reduced.

4. (Currently Amended) The device of claim 1, wherein the ~~first~~ displayable color includes at least one of a red, green, and blue color.

5. (Currently Amended) The device of claim 1, wherein the ~~first~~ displayable color is displayable at a plurality of gray scale levels.

6. (Original) The device of claim 1, wherein the lookup table stores gray scale values of a blue color.

7. (Previously Presented) The device of claim 6, wherein the lookup table stores gray scale values each corresponding to one of 64 gray scale levels of the blue color.

8. (Previously Presented) The device of claim 7, wherein the maximum gray scale value corresponds to a 51st gray scale level of the blue color.

9. (Previously Presented) The device of claim 8, wherein stored gray scale values corresponding to a 52nd gray scale level to a 64th gray scale level are identical to a gray scale value corresponding to the 51st gray scale level.

10. (Original) The device of claim 1, wherein the lookup table stores gray scale values of blue, red, and green colors.

11. (Previously Presented) The device of claim 10, wherein gray scale values of the 52nd gray scale level to the 64th gray scale level are storable in the lookup table upon mixing gray scale values of at least two of R, G, and B colors.

12. (Currently Amended) A method for improving a color reproducibility of a liquid crystal display (LCD) device, comprising:

increasing a gray scale value of ~~at least one~~ a B color of a red (R), green (G), and blue (B) color of the LCD device;

detecting during the increasing the gray scale value of the B color, a gray scale value of B color at which a color reproducibility of the LCD device is reduced;

storing a correspondence of the detected gray scale value of B color and a predetermined gray scale level of a displayable color having B color at which a color reproducibility of the LCD device is reduced in a lookup table;

~~compensating a received image information, the received image information including the detected gray scale value for a displayable color and retrieved gray scale values for at least one other color different from the displayable color to enhance the reproducibility of the displayable color, wherein the retrieved the gray scale values for the at least one other color are retrieved from a lookup table using a gray scale value for the displayable color of the received image information~~

compensating a displayable color by analyzing the displayable color , replacing the B color value in the input video data with a B color value at gray scale immediately prior to the level to begin reducing a color reproducibility retrieved from the lookup table in response to a determination that the B color value of the displayable color is greater than a reference gray scale level to begin reducing the color reproducibility, and outputting a compensated displayable color; and

applying the ~~compensated~~ image information of the compensated displayable color to data lines of the LCD device, ~~the compensated image information including the maximum gray scale value,~~

~~wherein the maximum gray scale value is the gray scale value corresponding to the maximum gray scale level displayable by the LCD panel for which the color reproducibility of the displayable color is not reduced, and~~

~~wherein detecting includes measuring the gray scale level of a color displayed by the LCD panel.~~

13. (Original) The method of claim 12, wherein the predetermined gray scale level corresponds to a gray scale level of the displayable color prior to a reduction in a reproducibility of the displayable color.

14. (Original) The method of claim 12, wherein the stored gray scale value is the maximum gray scale value.

15. (Canceled)

16. (Previously Presented) The method of claim 12, wherein the displayable color includes at least one of a red, green, and blue color.

17. (Previously Presented) The method of claim 12, wherein the maximum gray scale value corresponds to a 51st gray scale level of the blue color.

18. (Previously Presented) The method of claim 17, wherein the gray scale value at which the color reproducibility is reduced corresponds to a 52nd one of 64 gray scale levels of blue color displayable by the LCD device.

19. (Currently Amended) A method of driving a display device, comprising:
receiving image information, ~~the image information~~ including a gray scale value corresponding to a ~~first color~~ displayable color by the display device;

determining whether the gray scale value of B color of the displayable color is greater than a predetermined ~~corresponding~~ reference gray scale level ~~at which the first color is displayable by the display device~~ to begin reducing a color reproducibility in the display device;

applying the received image information to the display device upon a determination that if it is determined the gray scale value of B color is not greater than the predetermined corresponding reference gray scale level; and

~~compensating the image information if it is determined the gray scale value is greater than the predetermined corresponding gray scale level, wherein compensating the image information includes compensating a gray scale value for the first color displayable by the display device and supplying a gray scale value for a second color displayable by the display device, and wherein the gray scale data for the second display color is retrieved using the gray scale value of the image received image information corresponding to the first color displayable~~

compensating a displayable color by analyzing the displayable color in the received image information, and replacing the B color gray scale value in the received image information with a B color value at gray scale immediately prior to the level to begin reducing a color reproducibility retrieved from the lookup table in response to a determination that the B color gray scale value of the displayable color in the received image information is greater than the predetermined reference gray scale level to begin reducing a color reproducibility, and

retrieving at least one of an R color value and a G color value from the lookup table to be mixed with the received image information to compensate the displayable color in response to the determination that the B color value of the displayable color is greater than the reference gray scale level to begin reducing a color reproducibility; and

outputting a compensated displayable color.

20. (Previously Presented) The method of claim 19, further comprising applying the compensated image information to a plurality of data lines of the display device.

21. (Currently Amended) The method of claim 19, wherein the first color is at least one of a red, green, and blue color.

22. (Currently Amended) The method of claim 19, wherein the predetermined corresponding gray scale level corresponds to a gray scale level of the ~~first color~~ displayable by the display device, wherein the color is ~~displayable~~ at a reduced color reproducibility.

23. (Original) The method of claim 19, wherein the compensating includes mixing gray scale values of at least two of red, green, and blue colors.